STATEMENT OF

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BEFORE THE

HOUSE HOMELAND SECURITY COMMITTEE

SUBCOMMITTEE ON PREVENTION OF NUCLEAR AND BIOLOGICAL ATTACK

AND

SUBCOMMITTEE ON EMERGENCY PREPAREDNESS,

SCIENCE AND TECHNOLOGY

CONCERNING DETECTING NUCLEAR WEAPONS AND RADIOLOGICAL

MATERIALS: HOW EFFECTIVE IS AVAILABLE TECHNOLOGY?

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Mr. Chairman and members of the Subcommittees, it is an honor for me to be here today to discuss the Defense Threat Reduction Agency's (DTRA's) radiation detection and portal monitoring programs. I will summarize my statement and ask that it be included in its entirety in the record.

The mission of DTRA is to reduce the threat of weapons of mass destruction (WMD). Countering chemical, biological, radiological and nuclear weapons is the reason for the agency's existence. We focus full-time on countering these threats. Our mission is guided by the National Strategy to Combat Weapons of Mass Destruction, and direction provided by the Secretary of Defense and the Chairman of the Joint Chiefs of Staff. While our primary customers are the Combatant Commanders, DTRA also makes unique contributions to homeland security with its dual-use tools, knowledge, expertise, and services. We provide these through the US Northern Command, the Assistant Secretary of Defense for Homeland Defense, and others to address, counter, and mitigate WMD threats.

DTRA programs and activities support the three components of the national strategy: counterproliferation, consequence management, and nonproliferation. These components are synergistic by nature. Our counterproliferation programs provide offensive and defensive means for combating WMD. DTRA nonproliferation programs support diplomatic and cooperative international efforts to halt the spread of WMD. Our consequence management efforts provide capabilities for responding to actual use of WMD.

We also provide an interface between science and technology and the warfighters by integrating current and emerging technologies from many sources – US Government agencies, the DOE National Laboratories, academia, the private sector, and from our friends and allies – into products and tools that permit warfighters to counter and defend against the threat of WMD, including the nuclear/radiological threat. Within the realm of DTRA's detection technology program, our goals are to provide and enhance current detection, identification, and characterization capabilities for nuclear/radiological items, improve equipment survivability during military operations, and improve ease of use by the military forces. We also seek to standardize Concepts of Operations, improve data dissemination and networks, and provide reachback. These efforts yielded several tools that have been operationally employed in several missions to include OPERATIONs ENDURING FREEDOM and IRAQI FREEDOM.

One of our recent success stories is the Unconventional Nuclear Warfare Defense (UNWD) Program wherein we collaborated with DOE, the National Labs and the Services to establish four permanent test beds to develop technologies and concepts of operation to counter the threat from stolen nuclear weapons, improvised nuclear devices (INDs), or radiological dispersal devices (RDD) delivered by unconventional means other than missile or aircraft. Original funding for UNWD was provided by Congress under Public Law Number 107-117. The four sites, one for each branch of the armed forces, are located at: Kirtland Air Force Base, NM; Submarine Base Kings Bay, GA; Camp Lejeune, NC; and Fort Leonard Wood, MO. Successful demonstrations at these sites have also provided a unique venue for critical infrastructure facility protection systems, as well as integrating the system into state/local emergency response assets that will augment the facility response and recovery capabilities that could be used for homeland security.

As an off-shoot of this program, DTRA manages the Technical Evaluation and Assessment Monitor Site (TEAMS) at Kirtland AFB. TEAMS is a flexible, multi-use facility

that serves as an important test-bed to evaluate DTRA and inter-agency programs and emerging technologies to detect, combat, and defeat the nuclear/radiological threat.

Under the Cooperative Threat Reduction or CTR program, DTRA is also fielding nuclear/radiological portal monitors in Uzbekistan at 11 of that nation's international ports of entry. We are also planning for a second increment that will add six more ports of entry. Additionally, the CTR program will help the Government of Uzbekistan develop and implement a comprehensive "Train the Trainer" program to support the CTR-provided equipment. Our goal is to provide Uzbekistan with self-sustaining WMD detection and interdiction capabilities. The Department of Defense coordinates CTR WMD border security activities closely with the Departments of Energy (DOE) and State. In Uzbekistan, the CTR program also will install nuclear/radiological portal monitors similar to those that DOE is installing in Russia in its Second Line of Defense (SLD) program. The Department of Energy will provide follow-on maintenance and sustainment.

DTRA also executes the DoD International Counterproliferation Program. Congress mandated that the Department of Defense work in cooperation with the Federal Bureau of Investigation and the U.S. Customs Service (now, the Department of Homeland Security's (DHS) Bureau of Customs and Border Protection and Bureau of Immigration and Customs Enforcement) to develop and deliver training programs to counter the WMD proliferation threat. The resulting DoD International Counterproliferation (ICP) Program provides training, equipment, and technical assistance designed to enhance the detection, identification, interdiction, and investigation capabilities of border, customs and law enforcement officials in vulnerable regions. Using a country-specific implementation approach, the ICP Program directly supports the National Strategy to Combat Weapons of Mass Destruction as the United States continues "to work with other states to improve their capability to prevent unauthorized transfers of WMD." A significant component of the DoD ICP Program is delivering equipment necessary to allow officials tasked with interdicting WMD materials, or responding to crimes involving WMD-related materials, to perform their duties. The equipment includes radiation pagers, hand-held and bench-top isotope identifiers.

Two promising radiation detection research and development projects are sensitive scintillating glass fibers technology and mechanically cooled high-purity germanium spectrometry. These are particularly applicable to our operational requirements in that the glass fiber supports multi-mode application (land, sea, or air) and the mechanically cooled spectrometer provides unequaled resolution and identification capability in a hand-held device. In keeping with the defense in depth concept, these technologies allow interrogation of materials at any given point rather than in a single material handling area, such as a port or staging area. Both technologies are at, or slightly beyond, prototype stage and expect maturation with the year. Our technology development process optimizes these and other technologies by integrating their capabilities for a more robust effect including integration with information connectivity, ruggedness, and operator ease-of-use engineering.

Under the UNWD and other programs, DTRA has performed numerous tests to evaluate the performance of current detection technologies. For almost any "bright" materials, i.e., medical, and industrial, those probably used in an RDD, the existing portal monitors will detect unshielded material, whether fixed or at moderate highway speeds. The detectors were somewhat effective against these types of materials even if moderately shielded. However, for Special Nuclear Materials (SNM) the detectors are not as effective. However, while shielding

reduces the potential for radiation detection, it opens other venues for interdiction such as X-ray for dense materials (or alternative signatures). Additionally, the evaluations demonstrated that if portal monitors are placed in tandem, they are more effective and harder to defeat; problems with false and nuisance alarms and system interface need further development; and, that Concepts of Operations are key to the system success.

DTRA's knowledge, experience, and expertise are available to address the nuclear/radiological threat and we stand ready to assist other US government agencies in addressing their mission requirements. The most recent example of this long-standing commitment is our assignment of two detailees in coordination with OSD to the newly-formed Domestic Nuclear Detection Office (DNDO), one of whom was a key player in the Unconventional Nuclear Warfare Defense Program. DTRA stands ready to assist DNDO as it performs its critical mission.

Mr. Chairman, this concludes my remarks. I would be pleased to respond to your questions.